



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

Atty Dkt. 3700-2

C# M#

Group Art Unit: 1722

Serial No. 09/707,886

Examiner: E. Luk

Filed: November 8, 2000

Date: January 20, 2004

Title: MOLD PART GUIDE MECHANISM

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Correspondence Address Indication Form Attached.

NOTICE OF APPEAL

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner. (\$ 330.00) \$

An appeal **BRIEF** is attached in triplicate in the pending appeal of the above-identified application (\$ 330.00) \$ 330.00

Credit for fees paid in prior appeal without decision on merits -\$ ()

A reply brief is attached in triplicate under Rule 193(b) (no fee)

Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s) (\$110.00/1 month; \$420.00/2 months; \$950.00/3 months; \$1480.00/4 months) \$

SUBTOTAL \$ 330.00

Applicant claims "Small entity" status, enter 1/2 of subtotal and subtract -\$ (165.00)

SUBTOTAL \$ 165.00

Less month extension previously paid on

-\$ (0.00)

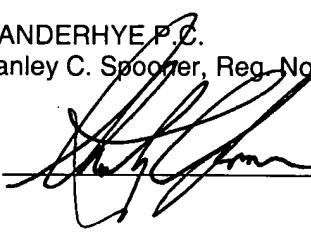
TOTAL FEE ENCLOSED \$ 165.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

1100 North Glebe Road, 8th Floor
Arlington, Virginia 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
SCS:kmm

NIXON & VANDERHYE, P.C.

By Atty: Stanley C. Spooner, Reg. No. 27,393

Signature: 



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

ANDREWS

Atty. Ref.: 3700-2

Serial No. 09/707,886

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For: MOLD PART GUIDE MECHANISM

* * * * *

APPEAL BRIEF

On Appeal From Group Art Unit 1722

Stanley C. Spooner
NIXON & VANDERHYE P.C.
8th Floor, 1100 North Glebe Road
Arlington, Virginia 22201-4714
(703) 816-4028
Attorney for Appellant

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Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified appeal is Hammonton
Mold Co. Inc. by virtue of an Assignment from the inventor submitted for
recordation on November 8, 2000.

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II. RELATED APPEALS AND INTERFERENCES

There are believed to be no related appeals or interferences with respect to the present application and appeal.

III. STATUS OF CLAIMS

Claims 1-28 are pending in the application. Claims 14-28 have been allowed, with claims 1-13 being variously rejected.

IV. STATUS OF AMENDMENTS

No amendments have been submitted in response to the second non-final Official Action.

V. SUMMARY OF THE INVENTION

The present invention relates to multi-piece molds and specifically relates to guide mechanisms for ensuring precise placement of mold parts.

Multi-piece molds for forming molded products, and in particular injection blow molded products, are well known. The molten material comprising the substance of the material to be molded is placed on the end of a blow molding tube (this is called a "parison"). The parison is located within the mold area and the portions of the mold are moved together around the parison. High pressure air is then provided which expands the material into the limits of the mold recesses

whereupon, after suitable cooling, the mold halves are separated and the blow molded product removed.

In many blow molded products there are recessed bottoms on the molded product making it difficult, if not impossible, to separate the mold halves without damage to the molded part. In such systems a third mold part identified as a bottom end plug is also utilized. The bottom end plug is slid into the mold forming position and, after the blow molding is completed, can be retracted so that any protrusion on the end plug (used to form the inner curvature of the bottom of the blow molded product) does not obstruct removal or otherwise damage the product when the upper and lower mold portions are separated and the product removed.

In the situation in which the mold portions do not fit perfectly together, an unsightly mold seam is formed on the molded product. In order to avoid forming mold seam lines in the molded product, it is required that the edges of the mold portions fit together very precisely. Wear between the mold parts and/or the guide structures, results in undesirable parting lines being formed on the molded product. Because of the industrial setting, the lubricated surfaces of the mold halves and the bottom end plug become contaminated and wear. In as few as 10-20,000 mold cycles, the bottom end plug mount surfaces wear sufficiently (due to wear and "slop" in the guide structure) that the bottom end plug does not precisely fit the mold, with the result that part lines are created in the bottom of the

blow molded product. Even if the sliding surfaces are protected by seals and/or protective boots, unacceptable wear occurs after 40-60,000 cycles.

Appellant found that improved mold life could be achieved by providing a very specific guide mechanism for guiding at least one movable mold part into and out of position with the other mold part. Appellant found that where one of the guide structures upon which one of the mold parts is fixed is sandwiched between two structures of the other guide structure and relative movement is facilitated by bearings, if one of the structures is adapted to apply a preload pressure to the mold bearings in a direction normal to the mold movement path, then an operating life of greater than 1 million cycles was possible, greatly increasing not only the life of conventional mold systems, but also the accuracy of mold location (and the consequent diminution of seam lines in the molded product).

Thus, the present invention is characterized in a mold for forming molded products wherein there are at least two mold parts and there is a guide mechanism for moving at least one movable mold part into and out of position with the other mold part, where the guide mechanism comprises "**a first structure**"; "**a second structure**" wherein one of these structures "**sandwiches at least a portion of the other of said first and second structures**"; "**a plurality of bearings separating said first and second structures**" wherein "**one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path.**"

VI. ISSUES

Whether claims 1-4 and 9-12 are obvious under 35 USC §103 over Talasz (U.S. Patent 3,734,671).

Whether claims 5-8 and 13 are obvious under 35 USC §103 as unpatentable over Talasz in view of Nowicki (U.S. Patent 3,267,184).

VII. GROUPING OF CLAIMS

The rejected claims stand or fall together.

VIII. ARGUMENT

1. Discussion of the References

Talasz (U.S. Patent 3,734,671) is a mold closing unit having a U-shaped frame with a pair of guide rails positioned on both sides of a cross member. The mold halves are fixed on structures which are slideably mounted on guide rails for movement towards and away from each other. The Examiner admits that Talasz "fails to clearly teach a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part."

In addition to failing to teach that one structure sandwiches another structure, the Talasz structure suggests that both mold parts move horizontally towards and away from each other. There is no suggestion that the rollers or bearings supporting and permitting the transverse movement of the mold halves

have any preload in a direction normal to the mold movement path. The Examiner has not suggested that Talasz has any such teaching, nor can such a teaching be found within the Talasz reference.

Nowicki et al (U.S. Patent 3,267,184) teaches a conventional two-part mold with a cam surface 78/76 which biases the bottom end plug 94 into position. Again, there is no teaching in Nowicki, nor is one alleged by the Examiner, which suggests that one of the first and second structures sandwiches at least a portion of the other of the first and second structures, nor is there any alleged disclosure of a structure which applies preload pressure to the bearings in a direction normal to the mold movement path. It is noted that springs 94 bias the cam surfaces in the direction of mold movement, nor in a direction "normal" to said mold movement path.

2. Discussion of the Rejections

Claims 1-4 and 9-12 stand rejected under 35 USC §103 as being unpatentable over Talasz. The Examiner suggests that many of the elements in appellant's claim 1 are shown in the Talasz reference. However, the Examiner admits that "Talasz fails to clearly teach a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part." Rather than showing that this admittedly missing structure is shown in another reference, the Examiner takes the position that it is unnecessary to show

this structural interrelationship and that it "would have been obvious to one of ordinary skill in the art to modify Talasz."

The Examiner, while apparently suggesting that because Talasz teaches two moving mold parts it would be obvious to have a single moving mold part and a fixed mold part, nevertheless fails to teach how or where any prior art reference teaches the admittedly missing structure from Talasz, i.e. "a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part."

Additionally, while the Examiner does not mention it in his rejection, he does note indicate how or where Talasz teaches the application of preload pressure on the bearings in a direction normal to the mold movement path.

Claims 5-8 and 13 stand rejected as being unpatentable over Talasz further in view of Nowicki. The Examiner admits that "Talasz fails to teach a return spring, cam or bottom end plug." The Examiner points out that the Nowicki reference teaches two mold parts and a bottom end plug and that the bottom end plug is brought into position with a guide element having cam surfaces. Without indicating how or where Nowicki teaches the missing structures from the Talasz reference (the admission at the top of page 3 that Talasz fails to teach "a first structure that is fixed to one mold part sandwiches a second structure fixed to the other mold part and a fixed mold part," the claimed application of "a preload pressure to said bearings in at least one direction normal to said mold movement

path" as well as the "return spring, cam or bottom end plug," the Examiner suggests that the claimed combination of elements is obvious in view of the Talasz/Nowicki combination.

3. The Errors in the Second Non-Final Rejection

There are at least four significant errors in the second non-Final Rejection and they are summarized as follows:

- (a) No cited reference teaches one structure sandwiching at least a portion of another structure;
- (b) No cited reference teaches the application of preload pressure to the bearings in a direction normal to the mold movement path;
- (c) There is no suggestion or motivation to modify Talasz; and
- (d) There is no suggestion or motivation to combine Talasz with Nowicki.

(a) No cited reference teaches one structure sandwiching at least a portion of another structure

Claim 1, from which claims 2-13 depend, recites a structural interrelationship which is simply not present in any prior art reference. The claim specifies that "one of said first and second structures sandwiches at least a portion of the other of said first and second structures."

The Examiner admits in the first two lines on page 3 of the second non-final Official Action that "Talasz fails to clearly teach a first structure that is fixed

to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part." Additionally, there is no suggestion by the Examiner in his discussion of the Nowicki reference that it teaches the "sandwiching" interrelationship between elements.

Since neither reference teaches this positively claimed structural interrelationship, the rejection of this structural interrelationship as being obvious in view of the cited prior art clearly fails.

The Patent Office has the burden under 35 USC §103 of establishing a *prima facie* case of obviousness and where a claimed structural interrelationship is not disclosed in any prior art patent, a *prima facie* case is clearly not made out.

(b) No cited reference teaches the application of preload pressure to the bearings in a direction normal to the mold movement path

Appellant's independent claim 1 also recites a structural characteristic which states "wherein one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path." The Examiner has completely ignored this structural characteristic and nowhere has he represented that Talasz or Nowicki contain any such teaching.

Of course, as can be seen in appellant's drawings, in one embodiment it is the belleville washers 46 which provide the desired preloading of the bearings by sandwiching the first structure between elements of the second structure. This is

clearly discussed in appellant's specification page 6, lines 4-8. This preload mechanism serves to accurately orient the relative position of the mold parts.

Again, because the burden is on the Patent Office to establish a *prima facie* case of obviousness, concurrent with that burden is the requirement that the Patent Office demonstrate that claimed structures and structural interrelationships be shown in at least one of the references. A structure for preloading the bearings and in particular preloading them in a direction normal to the mold movement path is simply not present in either Talasz or Nowicki.

Therefore, the Examiner has failed to meet his burden of establishing a *prima facie* case of obviousness under 35 USC §103.

(c) There is no suggestion or motivation to modify Talasz

While the Examiner concludes that "it would have been obvious to one of ordinary skill in the art to modify Talasz," he reaches this conclusion without any support or teaching in the record to date. The Court of Appeals for the Federal Circuit has consistently stated that

"to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a motivation to combine the references that create the case of obviousness. In other words, **the Examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." (emphasis added).

In re Rouffet, 47 USPQ2d 1453, 1457-8 (Fed. Cir. 1998).

The Examiner has provided no reason or motivation for modifying Talasz, other than to say that the resultant modification has a benefit, and this benefit somehow motivates the modification. This is 20/20 hindsight reasoning and could be applied to any inventive combination, i.e. because the combination has a benefit, all combinations would be obvious in view of that benefit. This is simply not the test of obviousness under 35 USC §103 and the Examiner has failed to provide the required motivation for the modification of the Talasz reference.

(d) There is no suggestion or motivation to combine Talasz with Nowicki

The Examiner admits that Talasz "fails to teach a return spring, cam or bottom end plug." However, the Examiner suggests that Nowicki teaches these missing elements and that it would be obvious to somehow combine the two references. Again, this is a situation in which the Examiner is taking appellant's claimed invention and using this as a roadmap to pick and choose elements from the Talasz and Nowicki references (and disregarding other elements and claimed interrelationships) in an attempt to suggest appellant's claims are obvious.

As noted above, the burden on the Examiner is to establish some reason or motivation for combining the references, without resort to appellant's invention. The Examiner suggests that it would be obvious to modify Talasz with the teaching of the Nowicki reference because the end result allows for "the

movement of a three mold part apparatus coming into position for forming articles." While the Examiner's sentence structure is somewhat strained, appellant understands the Examiner to be indicating that the beneficial combination of appellant's claimed elements is the motivation for combining those elements in the claimed fashion.

Again, as above, this is 20/20 hindsight reasoning which is prohibited by the Court of Appeals for the Federal Circuit. Should the Examiner believe that either Talasz or Nowicki contain any suggestion or motivation for combining those references, he is respectfully requested to point this out in the Examiner's Answer. Absent such a motivation, the claims are clearly non-obvious in view of the prior art.

IX. CONCLUSION

As noted above, claimed structures from appellant's independent claim 1 are simply missing from all prior art references. The Examiner admits that Talasz does not teach any "sandwiching" structure and he has failed to point out how or where the Nowicki reference contains any such teaching. The teaching of applying a preload pressure to the bearings which permit mold movement in the normal direction is absent from both the Talasz and Nowicki references. The Examiner has failed to meet his burden of providing a reason or motivation for either modifying the Talasz reference by itself or for combining the Talasz and

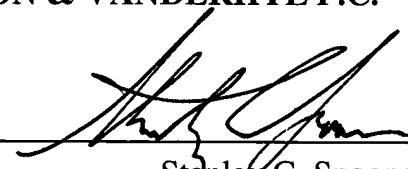
ANDREWS
Serial No. 09/707,886

Nowicki references. Any one of the above lapses on the Examiner's part voids the rejection under 35 USC §103. The failure to teach all four clearly establishes that appellant's claims are patentable over the Talasz and Nowicki combination.

In view of the above, the rejection of independent claim 1 and claims 2-13 dependent thereon is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
Enclosures
Appendix A - Claims on Appeal

APPENDIX A

Claims on Appeal

1. A mold for forming molded products, said mold comprising:

at least two mold parts, at least one of said at least two mold parts moveable along a mold movement path with respect to the other of said at least two mold parts; and a guide mechanism for guiding said at least one moveable mold part into and out of a mold forming position along said mold movement path in conjunction with the at least one other mold part, wherein said guide mechanism comprises:

a first structure fixed to said at least one other mold part;

a second structure fixed to said at least one moveable mold part, wherein one of said first and second structures sandwiches at least a portion of the other of said first and second structures; and a plurality of bearings separating said first and second structures and permitting movement along said mold movement path wherein said one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path.
2. The mold according to claim 1, wherein said mold movement path is a linear mold movement direction.

3. The mold according to claim 1, further including a means for moving said at least one moveable mold part into said mold forming position.

4. The mold according to claim 1, further including a means for returning said at least one moveable mold part away from said mold forming position.

5. The mold according to claim 3, wherein said mold includes an additional moving structure and said means for moving comprises a cam surface in conjunction with said at least one moveable mold part, said cam surface contacted by said moving structure and biasing said at least one moveable mold part into said mold forming position.

6. The mold according to claim 4, wherein said means for returning comprises a return spring biasing said at least one moveable mold part out of said mold forming position.

7. The mold according to claim 5, wherein said cam surface is planar.

8. The mold according to claim 5, wherein said cam surface is curved.

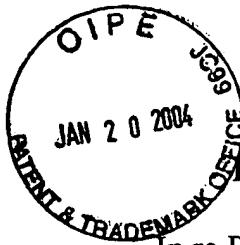
9. The mold according to claim 1, wherein said at least one other mold part is fixed and said first structure is fixed to said fixed mold part.

10. The mold according to claim 9, wherein said first structure is sandwiched between portions of said second structure.

11. The mold according to claim 2, wherein said plurality of bearing limit movement of said moveable mold part only to movement along said mold movement direction.

12. The mold according to claim 2, wherein a portion of said plurality of bearings are comprised of ball bearings and said first and second structures have at least two opposing surfaces into which corresponding ball bearing races are formed, said races extending in said mold movement direction.

13. The mold according to claim 1, wherein said mold comprises three mold parts, a top half, a bottom half and an end plug, wherein said at least one moveable mold part comprises said bottom end plug.



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APPEAL BRIEF

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Stanley C. Spooner
NIXON & VANDERHYE P.C.
8th Floor, 1100 North Glebe Road
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Attorney for Appellant

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APPEAL BRIEF

Sir:

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified appeal is Hammonton
Mold Co. Inc. by virtue of an Assignment from the inventor submitted for
recordation on November 8, 2000.

II. RELATED APPEALS AND INTERFERENCES

There are believed to be no related appeals or interferences with respect to the present application and appeal.

III. STATUS OF CLAIMS

Claims 1-28 are pending in the application. Claims 14-28 have been allowed, with claims 1-13 being variously rejected.

IV. STATUS OF AMENDMENTS

No amendments have been submitted in response to the second non-final Official Action.

V. SUMMARY OF THE INVENTION

The present invention relates to multi-piece molds and specifically relates to guide mechanisms for ensuring precise placement of mold parts.

Multi-piece molds for forming molded products, and in particular injection blow molded products, are well known. The molten material comprising the substance of the material to be molded is placed on the end of a blow molding tube (this is called a "parison"). The parison is located within the mold area and the portions of the mold are moved together around the parison. High pressure air is then provided which expands the material into the limits of the mold recesses

whereupon, after suitable cooling, the mold halves are separated and the blow molded product removed.

In many blow molded products there are recessed bottoms on the molded product making it difficult, if not impossible, to separate the mold halves without damage to the molded part. In such systems a third mold part identified as a bottom end plug is also utilized. The bottom end plug is slid into the mold forming position and, after the blow molding is completed, can be retracted so that any protrusion on the end plug (used to form the inner curvature of the bottom of the blow molded product) does not obstruct removal or otherwise damage the product when the upper and lower mold portions are separated and the product removed.

In the situation in which the mold portions do not fit perfectly together, an unsightly mold seam is formed on the molded product. In order to avoid forming mold seam lines in the molded product, it is required that the edges of the mold portions fit together very precisely. Wear between the mold parts and/or the guide structures, results in undesirable parting lines being formed on the molded product. Because of the industrial setting, the lubricated surfaces of the mold halves and the bottom end plug become contaminated and wear. In as few as 10-20,000 mold cycles, the bottom end plug mount surfaces wear sufficiently (due to wear and "slop" in the guide structure) that the bottom end plug does not precisely fit the mold, with the result that part lines are created in the bottom of the

blow molded product. Even if the sliding surfaces are protected by seals and/or protective boots, unacceptable wear occurs after 40-60,000 cycles.

Appellant found that improved mold life could be achieved by providing a very specific guide mechanism for guiding at least one movable mold part into and out of position with the other mold part. Appellant found that where one of the guide structures upon which one of the mold parts is fixed is sandwiched between two structures of the other guide structure and relative movement is facilitated by bearings, if one of the structures is adapted to apply a preload pressure to the mold bearings in a direction normal to the mold movement path, then an operating life of greater than 1 million cycles was possible, greatly increasing not only the life of conventional mold systems, but also the accuracy of mold location (and the consequent diminution of seam lines in the molded product).

Thus, the present invention is characterized in a mold for forming molded products wherein there are at least two mold parts and there is a guide mechanism for moving at least one movable mold part into and out of position with the other mold part, where the guide mechanism comprises "**a first structure**"; "**a second structure**" wherein one of these structures "**sandwiches at least a portion of the other of said first and second structures**"; "**a plurality of bearings separating said first and second structures**" wherein "**one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path**."

VI. ISSUES

Whether claims 1-4 and 9-12 are obvious under 35 USC §103 over Talasz (U.S. Patent 3,734,671).

Whether claims 5-8 and 13 are obvious under 35 USC §103 as unpatentable over Talasz in view of Nowicki (U.S. Patent 3,267,184).

VII. GROUPING OF CLAIMS

The rejected claims stand or fall together.

VIII. ARGUMENT

1. Discussion of the References

Talasz (U.S. Patent 3,734,671) is a mold closing unit having a U-shaped frame with a pair of guide rails positioned on both sides of a cross member. The mold halves are fixed on structures which are slideably mounted on guide rails for movement towards and away from each other. The Examiner admits that Talasz "fails to clearly teach a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part."

In addition to failing to teach that one structure sandwiches another structure, the Talasz structure suggests that both mold parts move horizontally towards and away from each other. There is no suggestion that the rollers or bearings supporting and permitting the transverse movement of the mold halves

have any preload in a direction normal to the mold movement path. The Examiner has not suggested that Talasz has any such teaching, nor can such a teaching be found within the Talasz reference.

Nowicki et al (U.S. Patent 3,267,184) teaches a conventional two-part mold with a cam surface 78/76 which biases the bottom end plug 94 into position. Again, there is no teaching in Nowicki, nor is one alleged by the Examiner, which suggests that one of the first and second structures sandwiches at least a portion of the other of the first and second structures, nor is there any alleged disclosure of a structure which applies preload pressure to the bearings in a direction normal to the mold movement path. It is noted that springs 94 bias the cam surfaces in the direction of mold movement, nor in a direction "normal" to said mold movement path.

2. Discussion of the Rejections

Claims 1-4 and 9-12 stand rejected under 35 USC §103 as being unpatentable over Talasz. The Examiner suggests that many of the elements in appellant's claim 1 are shown in the Talasz reference. However, the Examiner admits that "Talasz fails to clearly teach a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part." Rather than showing that this admittedly missing structure is shown in another reference, the Examiner takes the position that it is unnecessary to show

this structural interrelationship and that it "would have been obvious to one of ordinary skill in the art to modify Talasz."

The Examiner, while apparently suggesting that because Talasz teaches two moving mold parts it would be obvious to have a single moving mold part and a fixed mold part, nevertheless fails to teach how or where any prior art reference teaches the admittedly missing structure from Talasz, i.e. "a first structure that is fixed to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part."

Additionally, while the Examiner does not mention it in his rejection, he does note indicate how or where Talasz teaches the application of preload pressure on the bearings in a direction normal to the mold movement path.

Claims 5-8 and 13 stand rejected as being unpatentable over Talasz further in view of Nowicki. The Examiner admits that "Talasz fails to teach a return spring, cam or bottom end plug." The Examiner points out that the Nowicki reference teaches two mold parts and a bottom end plug and that the bottom end plug is brought into position with a guide element having cam surfaces. Without indicating how or where Nowicki teaches the missing structures from the Talasz reference (the admission at the top of page 3 that Talasz fails to teach "a first structure that is fixed to one mold part sandwiches a second structure fixed to the other mold part and a fixed mold part," the claimed application of "a preload pressure to said bearings in at least one direction normal to said mold movement

path" as well as the "return spring, cam or bottom end plug," the Examiner suggests that the claimed combination of elements is obvious in view of the Talasz/Nowicki combination.

3. The Errors in the Second Non-Final Rejection

There are at least four significant errors in the second non-Final Rejection and they are summarized as follows:

- (a) No cited reference teaches one structure sandwiching at least a portion of another structure;
- (b) No cited reference teaches the application of preload pressure to the bearings in a direction normal to the mold movement path;
- (c) There is no suggestion or motivation to modify Talasz; and
- (d) There is no suggestion or motivation to combine Talasz with Nowicki.

- (a) No cited reference teaches one structure sandwiching at least a portion of another structure.

Claim 1, from which claims 2-13 depend, recites a structural interrelationship which is simply not present in any prior art reference. The claim specifies that "one of said first and second structures sandwiches at least a portion of the other of said first and second structures."

The Examiner admits in the first two lines on page 3 of the second non-final Official Action that "Talasz fails to clearly teach a first structure that is fixed

to one mold part sandwiches a second structure fixed to one other mold part and a fixed mold part." Additionally, there is no suggestion by the Examiner in his discussion of the Nowicki reference that it teaches the "sandwiching" interrelationship between elements.

Since neither reference teaches this positively claimed structural interrelationship, the rejection of this structural interrelationship as being obvious in view of the cited prior art clearly fails.

The Patent Office has the burden under 35 USC §103 of establishing a *prima facie* case of obviousness and where a claimed structural interrelationship is not disclosed in any prior art patent, a *prima facie* case is clearly not made out.

(b) No cited reference teaches the application of preload pressure to the bearings in a direction normal to the mold movement path

Appellant's independent claim 1 also recites a structural characteristic which states "wherein one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path." The Examiner has completely ignored this structural characteristic and nowhere has he represented that Talasz or Nowicki contain any such teaching.

Of course, as can be seen in appellant's drawings, in one embodiment it is the belleville washers 46 which provide the desired preloading of the bearings by sandwiching the first structure between elements of the second structure. This is

clearly discussed in appellant's specification page 6, lines 4-8. This preload mechanism serves to accurately orient the relative position of the mold parts.

Again, because the burden is on the Patent Office to establish a *prima facie* case of obviousness, concurrent with that burden is the requirement that the Patent Office demonstrate that claimed structures and structural interrelationships be shown in at least one of the references. A structure for preloading the bearings and in particular preloading them in a direction normal to the mold movement path is simply not present in either Talasz or Nowicki.

Therefore, the Examiner has failed to meet his burden of establishing a *prima facie* case of obviousness under 35 USC §103.

(c) There is no suggestion or motivation to modify Talasz

While the Examiner concludes that "it would have been obvious to one of ordinary skill in the art to modify Talasz," he reaches this conclusion without any support or teaching in the record to date. The Court of Appeals for the Federal Circuit has consistently stated that

"to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a motivation to combine the references that create the case of obviousness. In other words, **the Examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." (emphasis added).

In re Rouffet, 47 USPQ2d 1453, 1457-8 (Fed. Cir. 1998).

The Examiner has provided no reason or motivation for modifying Talasz, other than to say that the resultant modification has a benefit, and this benefit somehow motivates the modification. This is 20/20 hindsight reasoning and could be applied to any inventive combination, i.e. because the combination has a benefit, all combinations would be obvious in view of that benefit. This is simply not the test of obviousness under 35 USC §103 and the Examiner has failed to provide the required motivation for the modification of the Talasz reference.

(d) There is no suggestion or motivation to combine Talasz with Nowicki

The Examiner admits that Talasz "fails to teach a return spring, cam or bottom end plug." However, the Examiner suggests that Nowicki teaches these missing elements and that it would be obvious to somehow combine the two references. Again, this is a situation in which the Examiner is taking appellant's claimed invention and using this as a roadmap to pick and choose elements from the Talasz and Nowicki references (and disregarding other elements and claimed interrelationships) in an attempt to suggest appellant's claims are obvious.

As noted above, the burden on the Examiner is to establish some reason or motivation for combining the references, without resort to appellant's invention. The Examiner suggests that it would be obvious to modify Talasz with the teaching of the Nowicki reference because the end result allows for "the

movement of a three mold part apparatus coming into position for forming articles." While the Examiner's sentence structure is somewhat strained, appellant understands the Examiner to be indicating that the beneficial combination of appellant's claimed elements is the motivation for combining those elements in the claimed fashion.

Again, as above, this is 20/20 hindsight reasoning which is prohibited by the Court of Appeals for the Federal Circuit. Should the Examiner believe that either Talasz or Nowicki contain any suggestion or motivation for combining those references, he is respectfully requested to point this out in the Examiner's Answer. Absent such a motivation, the claims are clearly non-obvious in view of the prior art.

IX. CONCLUSION

As noted above, claimed structures from appellant's independent claim 1 are simply missing from all prior art references. The Examiner admits that Talasz does not teach any "sandwiching" structure and he has failed to point out how or where the Nowicki reference contains any such teaching. The teaching of applying a preload pressure to the bearings which permit mold movement in the normal direction is absent from both the Talasz and Nowicki references. The Examiner has failed to meet his burden of providing a reason or motivation for either modifying the Talasz reference by itself or for combining the Talasz and

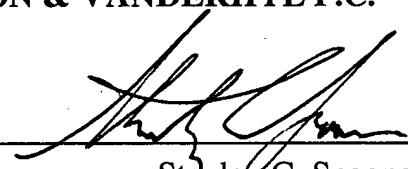
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Nowicki references. Any one of the above lapses on the Examiner's part voids the rejection under 35 USC §103. The failure to teach all four clearly establishes that appellant's claims are patentable over the Talasz and Nowicki combination.

In view of the above, the rejection of independent claim 1 and claims 2-13 dependent thereon is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
Enclosures
Appendix A - Claims on Appeal

APPENDIX A

Claims on Appeal

1. A mold for forming molded products, said mold comprising:

at least two mold parts, at least one of said at least two mold parts moveable along a mold movement path with respect to the other of said at least two mold parts; and a guide mechanism for guiding said at least one moveable mold part into and out of a mold forming position along said mold movement path in conjunction with the at least one other mold part, wherein said guide mechanism comprises:

a first structure fixed to said at least one other mold part;

a second structure fixed to said at least one moveable mold part, wherein one of said first and second structures sandwiches at least a portion of the other of said first and second structures; and

a plurality of bearings separating said first and second structures and permitting movement along said mold movement path wherein said one of said first and second structures applies a preload pressure to said bearings in at least one direction normal to said mold movement path.

2. The mold according to claim 1, wherein said mold movement path is a linear mold movement direction.

3. The mold according to claim 1, further including a means for moving said at least one moveable mold part into said mold forming position.

4. The mold according to claim 1, further including a means for returning said at least one moveable mold part away from said mold forming position.

5. The mold according to claim 3, wherein said mold includes an additional moving structure and said means for moving comprises a cam surface in conjunction with said at least one moveable mold part, said cam surface contacted by said moving structure and biasing said at least one moveable mold part into said mold forming position.

6. The mold according to claim 4, wherein said means for returning comprises a return spring biasing said at least one moveable mold part out of said mold forming position.

7. The mold according to claim 5, wherein said cam surface is planar.

8. The mold according to claim 5, wherein said cam surface is curved.

9. The mold according to claim 1, wherein said at least one other mold part is fixed and said first structure is fixed to said fixed mold part.

10. The mold according to claim 9, wherein said first structure is sandwiched between portions of said second structure.

11. The mold according to claim 2, wherein said plurality of bearing limit movement of said moveable mold part only to movement along said mold movement direction.

12. The mold according to claim 2, wherein a portion of said plurality of bearings are comprised of ball bearings and said first and second structures have at least two opposing surfaces into which corresponding ball bearing races are formed, said races extending in said mold movement direction.

13. The mold according to claim 1, wherein said mold comprises three mold parts, a top half, a bottom half and an end plug, wherein said at least one moveable mold part comprises said bottom end plug.